AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A system for managing data transactions between a first bus and a second bus, comprising:

a first transaction conversion module operably ~~connected~~ coupled to said first bus, said first transaction conversion module being operable to receive transactions from said first bus in a first format and to convert said transactions into an internal format;

a ~~fully~~ programmable ordering rules logic module operably ~~connected~~ coupled to said first transaction module to receive said converted transactions in said internal format and to control issuing of said transactions in accordance with a dependency relationship between individual converted transactions and further operable to issue validated transactions through a plurality of virtual channels using an inter-virtual channel arbiter and a plurality of intra-virtual channel arbiters; and

a second transaction conversion module operably ~~connected~~ coupled to said ~~transaction~~ ordering logic module and to said second bus, said second transaction conversion module being operable to convert said validated transactions into a second format for said second bus.

2. (Original) The system of claim 1, wherein transactions on said first bus are managed using a first set of ordering rules and transactions on said second bus are managed using a second set of ordering rules.

3. (Previously Presented) The system of claim 1, wherein said transactions comprise a time stamp and wherein said ordering rules logic module is operable to use said time stamp to issue said validated transactions.

4. (Original) The system of claim 3, wherein said rules logic module is operable to validate said transactions using a protocol based on an efficiency algorithm optimizing the availability of said second bus to accept a validated transaction.

5. (Original) The system of claim 4, wherein said ordering rules logic module is programmed by a configuration status register.

6. Canceled

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11 Canceled.

12. Canceled

13. Canceled.

14. (Currently Amended) A method for managing data transactions between a first bus and a second bus, comprising:

receiving a first transaction in a conversion module operably ~~connected~~ coupled to said first bus, said first transaction conversion module being operable to receive transactions from said first bus in a first format and to convert said transactions into an internal format;

receiving said converted transaction in a fully programmable ordering rules logic module operably ~~connected~~ coupled to said first transaction module;

using said ordering rules logic module to validate said converted transactions and to control issuing of validated transactions to a second transaction module in accordance with a dependency relationship between a plurality of transactions, wherein said validated transactions are issued through a plurality of virtual channels using an inter-virtual channel arbiter and a plurality of intra-virtual channel arbiters; and

using a second transaction conversion module to convert said validated transactions into a second format for said second bus.

15. (Original) The method of claim 14, wherein transactions on said first bus are managed using a first set of ordering rules and transactions on said second bus are managed using a second set of ordering rules.

16 (Previously Presented) The method of claim 15, wherein said transactions comprise a time stamp and wherein said ordering rules logic module is operable to use said time stamp to issue said validated transactions.

17. (Original) The method of claim 16, wherein said rules logic module is operable to validate said transactions using a protocol based on an efficiency algorithm optimizing the availability of said second bus to accept a validated transaction.

18. (Original) The method of claim 17, wherein said ordering rules logic module is programmed by a configuration status register.

19. Canceled.

20. Canceled.

21. Canceled.

22 Canceled.

23. Canceled.

24. Canceled.

25. Canceled.

26. Canceled.